

CLAIMS

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Claims 1-18
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An apparatus for processing mail, comprising:

a system transport for conveying mail along a transport path;

a scale positioned along the transport path for weighing the pieces of mail;

an imaging station positioned along the transport path for scanning the pieces of mail to obtain image data for the mail to determine the address of the recipients of the pieces;

a labeler positioned along the transport path for applying labels to the mail;

a processor operable to determine the postage required for a piece of mail in response to the weight of the piece of mail; and

a printer operable to print the determined postage onto the label for the piece.

2. The apparatus of claim 1 wherein the processor determines the postage in response to the determined recipient's address and the weight of the piece.
3. The apparatus of claim 1 wherein the imaging station comprises a line scan camera for scanning the piece of mail at a plurality of discrete

points to create a set of image data representative of at least a portion of the piece of mail.

4. The apparatus of claim 3 wherein the imaging station comprises an imaging computer for processing the image data to determine the recipient of the piece.
5. The apparatus of the claim 4 wherein the imaging computer analyzes the image data utilizing OCR to determine the address and the Zipcode of the recipient of the piece, and the piece is rejected if the determined address and Zipcode do not properly correlate.
6. The apparatus of claim 1 comprising a sorter for sorting the pieces of mail according to a characteristic of each piece.
7. The apparatus of claim 1 comprising a sorter for sorting the pieces into a plurality of bins in response to the determined address for the pieces.
8. The apparatus of claim 1 comprising a reject bin for receiving pieces for which the recipient's address is not determined.

9. The apparatus of claim 1 comprising a re-orientor operable to re-orient the mail as the feeder feeds the mail into the system transport.
10. The apparatus of claim 1 wherein the system transport comprises a roller bed for conveying the pieces of mail in a generally horizontal orientation.
11. The apparatus of claim 1 comprising a verifier operable to scan the pieces and determine whether the postage was properly printed.
12. The apparatus of claim 11 wherein the verifier comprises a line scan camera for scanning the pieces of mail at a plurality of discrete points to create image data representative of at least a portion of the pieces of mail.
13. A method for processing mail, comprising the steps of:
scanning a piece of mail to determine the recipient;
conveying the piece of mail to a scale;
weighing the piece;
determining the appropriate postage based on the determined weight of the piece;

adhering a label onto the piece; and
printing the appropriate postage on the label.

14. The method of claim 13 wherein the step of determining the appropriate postage comprises determining the appropriate postage based on the determined address and the determined weight of the piece.
15. The method of claim 13 comprising the step of sorting the piece into one of a plurality of output bins.
16. The method of claim 15 wherein the piece is sorted according to the recipient's address.
17. The method of claim 13 comprising the step of scanning the printed postage to verify that the postage was properly printed.
18. The method of claim 13 comprising the step of serially feeding the piece from a stack of mail in an input bin.
19. An apparatus for processing mail comprising:

a feeder for serially feeding mail from a stack of mail;
a conveyor confronting the stack of mail operable to convey the stack
of mail toward the feeder;
a pusher confronting the stack of mail operable to support the stack of
mail and urge the stack of mail toward the feeder; and
a controller operable to independently control the conveyor and the
pusher.

20. The apparatus of claim 18 wherein the controller is operable to
independently control the conveyor and the pusher to maintain the
angle between the mail and the feeder within a predetermined range
of angles.
21. The apparatus of claim 20 wherein the conveyor comprises a movable
belt confronting the bottom edge of the pieces of mail in the stack of
mail.
22. The apparatus of claim 20 wherein the pusher comprises a
displaceable plate engaging the end of the stack of mail remote from
the feeder.

23. The apparatus of claim 20 comprising two sensors adjacent the feeder, wherein the sensors are vertically separated and operate to detect the lead end of the stack of mail, and the controller controls the pusher and the conveyor in response to signals from that two sensors.
24. The apparatus of claim 20 comprising a first motor for driving the pusher, wherein the controller controls the first motor.
25. The apparatus of claim 24 comprising a second motor for driving the conveyor, wherein the controller controls the second motor.
26. A method for processing mail, comprising the steps of:
serially feeding mail with a feeder;
conveying a stack of mail toward the feeder;
monitoring the angle that the mail forms with the feeder as the mail engages the feeder; and
controlling the manner in which the stack of mail is conveyed toward the feeder to maintain the angle that the mail forms with the feeder within a predetermined range of angles.
27. The method of claim 26, wherein the step of conveying comprises the

steps of:

conveying the stack of mail on a conveyor engaging a lower edge of
the pieces of mail in the stack of mail; and
pushing the stack of mail forwardly with a displaceable pusher
engaging the stack of mail adjacent an upper edge of at least
one of the pieces of mail.

28. The method of claim 27 wherein the step of controlling the manner in which the stack of mail is conveyed comprises independently controlling the displacement of the conveyor and the pusher.